

Claims:

1. Method for the generation of chondrons comprising the step of:

5 cultivation of cells at unphysiologically high extra cellular concentrations of magnesium (Mg),

10 characterized in that at least once the unphysiologically high extra cellular Mg concentration is increased during cell cultivation.

2. The method according to claim 1, wherein said magnesium is a solution of magnesium sulphate or magnesium chloride.

- 15 3. The method according to any one of claims 1 or 2, wherein said extra cellular concentrations of said magnesium solution range from about 12 mMol to about 65 mMol.

- 20 4. The method according to any one of the preceding claims, wherein the cultivation of the cells is further affected in the presence of foetal calf serum (FCS) or mammalian serum.

- 25 5. The method according to any one of the preceding claims, wherein the cultivation of the cells is further affected in the presence of at least one growth factor and/or cytokine and/or hormone.

- 30 6. The method according to any one of the preceding claims, wherein chondrocytes isolated from tissue of a mammal are cultivated.

- 35 7. The method according to any one of the preceding claims, wherein chondrocytes differentiated from chondrocyte precursor cells and/or from mesenchymal stem cells and/or embryonic stem cells and/or adult stem cells are cultivated.

8. The method according to claim 6 or 7, wherein the chondrocytes are of mammal origin.
- 5 9. The method according to claim 8, wherein the chondrocytes are of human origin.
- 10 10. The method according to any one of the preceding claims, wherein the cells, preferably chondrocytes, are seeded into tissue culture flasks and are cultivated in monolayer culture with medium supplemented with FCS and concentration of magnesium is initially in the range of 11 to 25 mMol.
- 15 11. The method according to any one of the preceding claims wherein when increasing the Mg concentration the cells are embedded in alginate and cultured in medium supplemented with serum from said mammal, the concentration of magnesium is increased to a range of 21 to 65 mMol.
- 20 12. The method according to claim 11 wherein the cultivation is effected under an oxygen partial pressure of 8 %.
- 25 13. A method for the preparation of cartilaginous tissue comprising the method according to any one of claims 1 to 12.
- 30 14. The method according to any one of the preceding claims, wherein cultivation is performed in vitro.
- 35 15. Use of the chondrons obtained according to any one of claims 1 to 12 and 14 for the preparation of cartilaginous tissue.
16. Cartilaginous tissue obtained according to a method of claim 13 or 14.